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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,510	09/10/2003	Qiang Cao	44-21-24-5	3612

7590 06/15/2005

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER	
VU, MICHAEL T	

ART UNIT	PAPER NUMBER
2683	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/659,510	CAO ET AL.	
	Examiner	Art Unit	
	Michael Vu	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/10/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siira (US 5,974,321) in view of Bender (US 6,002,933). Hereafter [Siira and Bender].

Regarding **claim 1,** Siira teaches a method of selecting cells of base stations of a network for mobile telecommunications for soft-handover (C1, L57-60) connection with a mobile user terminal so as to provide at a first network node multiple received representations of a data frame (fig. #4, C1, L59-63) from the mobile user terminal (20) within a predetermined period (C2, L32-34), or each cell delay due to transfer of a

representation of the received data frame across interface between network nodes along a transfer path to said first network node is estimated by determining the contribution to the delay caused by each interface along the transfer path (C2, L50-54, fig. #5 frames T0-T3). Siira **fails to teaches** the cells being selected dependent upon the associated delays. However, Bender teaches the traffic reports, either grants or denies the request based on the traffic load level which reads on delays depending on amount of traffic. Admission control subsystem either accepts or rejects the inter-system soft handoff request (C5, L26-29, abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira, such that the cells being selected dependent upon the associated delays, to provide means for selecting cells based on the delay times of data transmitted through the network.

Regarding **claim 6**, Siira teaches a network for mobile telecommunications comprising a selector (abstract, fig.4 element #410 / selects signals from BTS's) operative to select cells of base stations for soft-handover connection with a mobile user terminal so as to provide at a first network node multiple received representations of a data frame (fig.3, signaling transmits frames between mobile and BTS's involved in the soft-handoff) from the mobile user terminal within a predetermined period (C5, L43-55 teaches handoff within minimum time frame), but Siira **fails to teach** further comprising delay estimation means operative to estimate, for each cell, delay due to transfer of a representation of the received data frame across interface between network nodes along a transfer path to said first network node by determining the contribution to the

delay caused by each interface along the transfer path, the selector being operative to select cells dependent upon the associated delays. However. Bender teaches the data frame interconnect with network nodes along with a transfer path being delay between the first cellular telephone system and the second cellular system (C5, L26-29 delay cause by traffic load level), (C5, L26-31 selector which is control processor selected which cells upon the associated delays), and (C5, L38-42 teaches the delay due to transfer the received data frame across between the network nodes and transfer path).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira, such that further comprising delay estimation means operative to estimate, for each cell, delay due to transfer of a representation of the received data frame across interface between network nodes along a transfer path (C5, L38-42 of Bender) to said first network node by determining the contribution to the delay caused by each interface along the transfer path (C5, L26-29 of Bender), the selector being operative to select cells dependent upon the associated delays to improve of performing of the cellular telephone system when it's handoff.

3. Claims 2 – 5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Siira and Bender further in view of Satarasinghe (US 6,192,246). [Hereafter Satarasinghe]

Regarding **claim 2**, the combination of Siira and Bender teach in claim 1, but **fails to teaches** selecting the cells for inclusion in an active set of cells in soft-handover connection. However, Satarasinghe teaches either keeping or removing cells in the

active set based on measuring pilot signal strength or round trip delay (Abstract, C2, L33-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that in an active set of cells in soft-handover connection, to provide conditions for using the most suitable cells based on measured delay are included in an Active set to support the communications network.

Regarding **claim 3**, the combination of Siira and Bender teach in claim 1, but **fails to teach** selecting the cells for inclusion in a set of cells to be monitored as to radio quality for possible inclusion in an active set of cells in soft-handover connection. However, Satarasinghe teaches each cell site operating on the common radio frequency (RF) emits the pilot's signal, the mobile unit detects the strength of cell site signal to determine if it exceeds a certain minimum threshold (C2, L33-37). Each cell has its own list of potential handoff candidate and adds the pilot to the mobile units active set (C1, L38-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that selecting the cells for inclusion in a set of cells to be monitored as to radio quality for possible inclusion in an active set of cells in soft-handover connection, to greatly reduce the potential of handling off a call to an undesired cell with poor signal strength.

Regarding **claim 4**, the combination of Siira and Bender teach in claim 1, but **fails to teach** wherein cells are selected dependent on factors comprising the delay

estimated, the received signal quality and the radio resources available. However, Satarasinghe teaches the measuring signal strength, delay as well as determine cells/resources available in the area to handoff to (C1, L37-57 and C2, L33-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that the cells are selected dependent on factors comprising the delay estimated, the received signal quality and the radio resources available, to achieve the cellular network dynamically adapts to its environment for soft-handoff operations.

Regarding **claim 5**, the combination of Siira and Bender teach in claim 1, but **fails to teach** wherein each cell estimated as providing a representation of the received data frame that arrives at said first network node later than a predetermined time after the first of the representations of the received data frame is not selected. However, Satarasinghe teaches either keeping or removing the cells from the mobile unit's active set if either the pilot signal strength or the round trip delay predetermined threshold (C2, L33-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that each cell estimated as providing a representation of the received data frame that arrives at said first network node later than a predetermined time after the first of the representations of the received data frame is not selected to optimizes the performance of the cellular network and adjusting the conditions for handoff.

Regarding **claim 7**, the combination of Siira and Bender teach in claim 6, but **fails to teach** wherein the selector is operative to select cells for inclusion in an active set of cells in soft-handover connection. However, Satarasinghe teaches either keeping or removing cells in the active set based on measuring pilot signal strength or round trip delay (Abstract, C2, L33-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that in an active set of cells in soft-handover connection, to provide conditions for using the most suitable cells are included in an Active set to support the communications network.

Regarding **claim 8**, the combination of Siira, Bender, and Satarasinghe teach in claim 7, wherein the selector is operative to select cells for inclusion in a set of cells to be monitored as to radio quality for possible inclusion in an active set of cells in soft-handover connection. However, Satarasinghe further teaches each cell site operating on the common radio frequency (RF) emits the pilot's signal, the mobile unit detects the strength of cell site signal to determine if it exceeds a certain minimum threshold (C2, L33-37 of Satarasinghe). Each cell has its own list of potential handoff candidate and adds the pilot to the mobile units active set (C1, L38-50 of Satarasinghe).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that selecting the cells for inclusion in a set of cells to be monitored as to radio quality for possible inclusion in an active set of cells in soft-handover connection, to greatly reduce the potential of handling off a call to an undesired cell with poor signal strength.

Regarding **claim 9**, the combination of Siira, Bender teach in claim 6, but **fails to teach** wherein the selector is operative to select cells dependent on factors comprising the delay estimated, the received signal quality and the radio resources available. However, Satarasinghe teaches the signal strength, delay and resources being the cells available in the area to handoff to (C1, L37-57 and C2, L33-38 of Satarasinghe).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that the cells are selected dependent on factors comprising the delay estimated, the received signal quality and the radio resources available, to achieve the cellular network dynamically adapts to its environment for soft-handoff operations.

Regarding **claim 10**, the combination of Siira, Bender teach, but **fails to teach** wherein the selector is operative such that each cell providing a representation of the received data frame that arrives at said first network node later than a predetermined time after the first of the representations of the received data frame is not selected. However, Satarasinghe teaches either keeping or removing the cells from the mobile unit's active set based on the pilot signal strength or the round trip delay predetermined thresholds (C2, L33-37).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Siira and Bender, such that each cell estimated as providing a representation of the received data frame that arrives at said first network node later than a predetermined time after the first of the representations of the

received data frame is not selected, to optimizes the performance of the cellular network and adjusting the conditions for handoff operations.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Siira (US 5,978,680)
2. Siira (US 5,825,760)
3. Siira (US 6,038,458)
4. Kamel (6,496,531)
5. Vilmur (5,590,177)
6. Abu-Amara (US 5,930,714)

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Vu whose telephone number is (571)272-8131. The examiner can normally be reached on 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Vu

Michael Vu

PRIMARY EXAMINER
6-9-05